

50 CFR Part 17

Endangered and Threatened Wildlife and Plants; Proposed Endangered Status for *Argyroxiphium sandwicense* var. *sandwicense* ('ahinahina or Mauna Kea silversword)

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: The Service proposes to determine *Argyroxiphium sandwicense* var. *sandwicense* ('ahinahina or Mauna Kea silversword) to be an endangered species, under the authority contained in the Endangered Species Act of 1973, as amended. This plant is known only from one small population of 35 plants located on the east slope of Mauna Kea on the island of Hawaii, State of Hawaii. The lone population of this species is vulnerable to any substantial habitat alteration and faces the present threat of elimination through grazing and trampling by feral animals and the potential threat of damage by insect larvae. A determination that *Argyroxiphium sandwicense* var. *sandwicense* is an endangered species would implement the protection provided by the Endangered Species Act of 1973, as amended. The Service seeks

data and comments from the public on this proposal and is requesting further information on the species' status.

DATES: Comments from all interested parties must be received by May 6, 1985. Public hearing requests must be received by April 22, 1985.

ADDRESSES: Comments and materials concerning this proposal should be sent to Regional Director, U.S. Fish and Wildlife Service, 500 NE. Multnomah Street, Portland, Oregon 97232.

Comments and materials received will be available for public inspection, by appointment, during normal business hours, at the above address.

FOR FURTHER INFORMATION CONTACT: Mr. Wayne White, Chief, Division of Endangered Species, U.S. Fish and Wildlife Service, 500 NE. Multnomah Street, Portland, Oregon 97232 (503/231-6131 or FTS 429-6131).

SUPPLEMENTARY INFORMATION:

Background

This taxon was first collected in 1825 by James Macrae and was described in 1836 by De Candolle. When Macrae visited Mauna Kea, several populations of this silversword were extant on the upper slopes of the volcano and the species presumably numbered thousands of individuals. The only known collections of Mauna Kea silversword after 1916 are from the Wailuku River population. In 1916, the taxon was abundant at this site. However, today only about 35 individuals remain.

There has been some disagreement concerning the proper taxonomic

disposition of this taxon. *Argyroxiphium sandwicense* has sometimes been interpreted broadly to include plants of both the islands of Maui and Hawaii, without any recognition of infraspecific taxa. Alternatively, the Maui plants have been segregated at the specific level as *A. macrocephalum*. Recent research supports the acceptance of an inclusive concept of the species, with one variety (var. *sandwicense*) confined to the island of Hawaii and one (var. *macrocephalum*) native to Maui. Both taxa are known as 'ahinahina in Hawaiian.

The Hawaii taxon historically occupied the alpine slopes of the Mauna Kea volcanic dome, mostly above the tree line and including barren alpine desert areas above other vegetation. The only known extant population is found in the upper limits of *Sophora* woodland and the alpine scrub above the tree line along the Wailuku River drainage. The Wailuku River population is found on State lands in the Mauna Kea Forest Reserve and on Hawaiian Home Lands.

There are also historic reports of silverswords from Hualalai and Mauna Loa on the island of Hawaii. The plants on Hualalai may have been *A. sandwicense* var. *sandwicense*. No specimens are known from this population, which is no longer believed to be extant. It may have represented an undescribed and now-extinct taxon. Reports from Mauna Loa are believed to have been based on the related *A. kauense*, which is endemic to Mauna Loa.

Argyroxiphium sandwicense var. *sandwicense* produces a globe-shaped basal rosette of dagger-shaped leaves up to 1 foot long and usually less than 1/2 inch wide. The leaves are cloaked with silvery hairs. These rosetts grow for 5 to 15 years, reaching diameters of 2 feet or more before producing a rather narrow flowering stalk has numerous branches, each bearing a flowering head about 1 inch in diameter with pinkish ray flowers. After flowering, plants with a single rosette die. Individual rosettes of multiple-rosette plants also die after flowering.

On June 16, 1976, the Service published a proposed rule in the *Federal Register* (41 FR 24523) to determine approximately 1,700 vascular plant taxa to be endangered species. General comments on the 1976 proposal were summarized in an April 26, 1978, *Federal Register* publication (43 FR 17909).

Argyroxiphium macrocephalum was included in the June 16, 1976, proposal. It is apparent that this was mistaken, and that the intent was to indicate *A. sandwicense* in an inclusive sense,

comprising both the Maui and Hawaii taxa.

The Endangered Species Act Amendments of 1978 required that all proposals over two years old be withdrawn. A 1-year grace period was given to those proposals already more than 2 years old. Subsequently, on December 10, 1979, the Service published a notice of the withdrawal of the portion of the June 16, 1976, proposal that had not been made final, along with other proposals that had expired (44 FR 70796); this notice of withdrawal included *Argyroxiphium macrocephalum*.

Argyroxiphium sandwicense was included in the December 15, 1980 (45 FR 82479), updated review notice as a candidate species. *Argyroxiphium macrocephalum* was included in that notice as a tax on no longer under review because it was not considered to be a separate entity.

Summary of Factors Affecting the Species

Section 4(a)(1) of the Endangered Species Act (16 U.S.C. 1531 *et seq.*) and regulations promulgated to implement the listing provisions of the Act (to be codified at 50 CFR Part 424; see 49 FR 38900, October 1, 1984) set forth the procedures for adding species to the Federal lists. A species may be determined to be an endangered or threatened species due to one or more of the five factors described in section 4(a)(1). These factors and their application to *Argyroxiphium sandwicense* DC. var. *sandwicense* ('ahinahina or Mauna Kea silversword) are as follows:

A. The present or threatened destruction, modification, or curtailment of its habitat or range. The species historically was abundant on Mauna Kea from the 8,500 foot level to the 12,000 foot level. The activity of feral animals (goats, cattle, sheep, pigs, and horses) that were first introduced just before the 19th century has eliminated the silversword from the fragile upper zones of its former range and has reduced the species throughout the range to one known population of about 35 individuals. Feral animal populations have vastly altered and degraded the vegetation of Mauna Kea in general (Warner 1960). Direct results of animal activity have been mechanical damage of aerial and subterranean plant parts, consumption of plant material and dispersal of exotic plant species. Secondary effects include wind and water erosion of the thin soil mantle after it has been stripped of stabilizing vegetation.

A portion of the only known extant population has been fenced by the State of Hawaii; however, the enclosure has not been effective against them more recently introduced mouflon sheep, which are currently threatening the species' survival by grazing and browsing activities.

B. Overutilization for commercial, recreational, scientific, or educational purposes. In the past, unnecessarily large quantities of fruit have been removed from the extant population for propagation. The species is of ornamental interest and is threatened by collection for horticultural purposes. Entire flowering stalks have often been removed by individuals hoping to propagate this attractive species from seed. Propagation of silverswords is not easy as few flowers produce viable seed and seed germination is low (Kobayashi 1974).

C. Disease or predation The closely related Haleakala silversword is damaged by the predacious larvae of insects such as *Rhynchephestia rhabdotis* and *Tephritis cratericola*, which were found to have damaged a mean of 60 percent of the seeds produced. An insect thought to be the latter or a similar insect has been observed on the Mauna Kea silversword (Carr 1982). Plants are severely grazed by introduced herbivores even within the enclosure area.

D. The inadequacy of existing regulatory mechanisms. No regulatory mechanisms exist at the present time. Federal listing would automatically invoke listing under Hawaiian State law, which prohibits taking and encourages conservation by State government agencies.

E. Other natural or manmade factors affecting its continued existence. The extremely small size of the only known remaining population of the species threatens its reproductive capacity and has resulted in a reduced gene pool that may threaten its adaptive capacity. The species grows as a rosette for between 5 and 15 years before flowering. This low reproductive potential has been severely affected by reduction of the population size. Very few individuals produce a fruit crop in any one year. For 2 or more years no plants may bloom and some years 4 or 5 plants may bloom.

Concurrent with population decline in insect-pollinated species such as the silversword is often a loss of co-evolved pollinator species. The drastic alteration of the upper forest zone on Mauna Kea in general (Warner 1960) may have resulted in a parallel reduction of potential pollinators.

The Service has carefully assessed the best scientific information available regarding the past, present, and future threats faced by the species in determining to propose this rule. Based on this evaluation, the preferred action is to list *Argyroxiphium sandwicense* var. *sandwicense* as endangered. This designation reflects the strong likelihood that, without the institution of appropriate conservation measures, the species is likely to become extinct throughout its range. A discussion of why critical habitat is not proposed to be designated is included in the "Critical Habitat" section.

Critical Habitat

Section 4(a)(3) of the Act, as amended, requires that, to the maximum extent prudent and determinable, the Secretary designate any habitat of a species which is considered to be critical habitat at the time the species is determined to be endangered or threatened. The Service finds that designation of critical habitat is not prudent for this species at this time. As discussed under Factor B in the "Summary of Factors Affecting the Species," *Argyroxiphium sandwicense* var. *sandwicense* is threatened by taking, an activity difficult to control and not regulated by the Endangered Species Act with respect to plants, except for a prohibition against removal and reduction to possession of endangered plants from areas under Federal jurisdiction.

The species is known only from lands owned by the State of Hawaii and from Hawaiian Home Lands. The State is aware of the existence of the species and has taken preliminary steps for protection. Upon Federal listing the silversword would be placed upon the Hawaii State list, which prohibits taking and encourages conservation by State governmental agencies. Management for the survival and recovery of the species can be coordinated between the U.S. Fish and Wildlife Service and the State of Hawaii. No additional benefit would accrue to *Argyroxiphium sandwicense* var. *sandwicense* through critical habitat designation, and publication of critical habitat descriptions could make this species even more vulnerable.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Endangered Species Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing encourages and results in conservation actions by Federal, State,

and private agencies, groups, and individuals. The Endangered Species Act provides for possible land acquisition and cooperation with the States, and requires that recovery actions be carried out for all listed species. Such actions are initiated by the Service following listing. The protection required of Federal agencies and the prohibitions against taking are discussed, in part, below.

Section 7(a) of the Act, as amended, requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened, and with respect to its critical habitat, if any is being designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR Part 402, and are now under revision (see proposal at 48 FR 29990; June 29, 1983). Section 7(a)(4) requires Federal agencies to confer informally with the Service on any action that is likely to jeopardize the continued existence of a proposed species or result in destruction or adverse modification of proposed critical habitat. If a species is listed subsequently, Section 7(a)(2) requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of such a species or to adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with the Service. Currently, no activities to be authorized, funded, or carried out by Federal agencies are known to exist that would affect *Argyroxiphium sandwicense* var. *sandwicense*.

The Act and its implementing regulations found at 50 CFR 17.61, 17.62, and 17.63 set forth a series of general trade prohibitions and exceptions that apply to all endangered plant species. With respect to *Argyroxiphium sandwicense* var. *sandwicense*, all trade prohibitions of section 9(a)(2) of the Act, implemented by 50 CFR 17.61, would apply. These prohibitions, in part, would make it illegal for any person subject to the jurisdiction of the United States to import or export, transport in interstate or foreign commerce in the course of a commercial activity, or sell or offer for sale this species in interstate or foreign commerce. Certain exceptions can apply to agents of the Service and State conservation agencies. The Act and 50 CFR 17.62 and 17.63 also provide for the issuance of permits to carry out otherwise prohibited activities involving endangered species under certain circumstances. No trade in this species

is known. It is anticipated that few trade permits involving this species would be requested.

Section 9(a)(2)(B) of the Act, as amended in 1982, prohibits the removal and reduction to possession of endangered plant species from areas under Federal jurisdiction. The new prohibition would apply to *Argyroxiphium sandwicense* var. *sandwicense* if it were found to occur on land under Federal jurisdiction. Permits for exceptions to this prohibition are available through section 10(a) of the Act, until revised regulations are promulgated to incorporate the 1982 Amendments. Proposed regulations implementing this new prohibition were published on July 8, 1983 (48 FR 31417), and it is anticipated that these will be made final following public comment. The only known extant propulation occurs on State of Hawaii lands. It is anticipated that few if any taking permits will be requested for the species. Requests for copies of the regulations on plants and inquiries regarding them may be addressed to the Federal Wildlife Permit Office, U.S. Fish and Wildlife Service, Washington, D.C. 20240 (703/235-1903 or FTS 235-1903).

Public Comments Solicited

The Service intends that any final rule adopted will be accurate and as effective as possible in the conservation of endangered or threatened species. Therefore, any comments or suggestions from the public, other concerned governmental agencies, the scientific community, industry or any other interested party concerning any aspect of these proposed rules are hereby solicited. Comments particularly are sought concerning the following:

(1) Biological, commercial trade, or other relevant data concerning any threat (or lack thereof) to *Argyroxiphium sandwicense* var. *Sandwicense*;

(2) The location of any additional populations of this taxon;

(3) Additional information concerning the range and distribution of this species or indicating any area that should or should not be designated as critical habitat; and

(4) Current or planned activities in the subject area and their possible impacts on this taxon.

Final promulgation of the regulation on *Argyroxiphium sandwicense* var. *sandwicense* will take into consideration the comments and any additional information received by the Service, and such communications may lead to adoption of a final regulation that differs from this proposal.

The Endangered Species Act provides for a public hearing on this proposal, if requested. Requests must be filed within 45 days of the date of the proposal. Such requests must be made in writing and addressed to the Regional Director, U.S. Fish and Wildlife Service, 500 NE. Multnomah Street, Portland, Oregon 97232.

National Environmental Policy Act

The Fish and Wildlife Service has determined that an Environmental Assessment, as defined by the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act of 1973, as amended. A notice outlining the Service's reasons for this determination was published in the *Federal Register* on October 25, 1983 (48 FR 49244).

Literature Cited

- Carr, G. D. 1982. Status report on *Argyroxiphium sandwicense* var. *sandwicense*. Research Corporation of the University of Hawaii, under contract 14-16-001-79096 to the U.S. Fish and Wildlife Service. 41 pp.
- Kobayashi, H. K. 1974. Preliminary investigations on insects affecting the reproductive stage of the silversword (*Argyroxiphium sandwicense* DC.) Compositae, Haleakala Crater, Maui, Hawaii. *Proc. Haw. Ent. Soc.* 21:397-402.
- Warner, R. E. 1960. A forest dies on Mauna Kea. *Pacific Discovery* 13:6-14.

Author

The primary author of this proposed rule is Carol A. Wilson, U.S. Fish and Wildlife Service, 500 NE. Multnomah Street, Portland, Oregon 97232 (503/231-6131 or FTS 429-6131).

List of Subjects in 50 CFR Part 17

Endangered and threatened wildlife, Fish, Marine mammals, Plants, (agriculture).

Proposed Regulation Promulgation

PART 17—[AMENDED]

Accordingly, it is hereby proposed to amend Part 17, Subchapter B of Chapter I, Title 50 of the Code of Federal Regulations, as set forth below:

1. The authority citation for Part 17 reads as follows:

Authority: Pub. L. 93-205, 87 Stat. 884; Pub. L. 94-359, 90 Stat. 911; Pub. L. 95-632, 92 Stat. 3751; Pub. L. 96-153, 93 Stat. 1225; Pub. L. 97-304, 96 Stat. 1411 (16 U.S.C. 1531 *et seq.*).

2. It is proposed to amend § 17.12(h) by adding the following, in alphabetical order, under Asteraceae, to the List of Endangered and Threatened Plants.

§ 17.12 Endangered and threatened plants.

(h) * * *

Species		Historic range	Status	When listed	Critical habitat	Special rules
Scientific name	Common name					
Asteraceae—aster family:						
<i>Argyroxiphium sandwicense</i>	'ahinahina (Mauna Kea sil-	U.S.A. (HI).....	E		NA	NA
var. <i>sandwicense</i> .	versword).					

Dated: February 21, 1985.

Susan E. Recce,

Acting Assistant Secretary for Fish and
Wildlife and Parks.

[FR Doc. 85-5373 Filed 3-5-85; 8:45 am]

BILLING CODE 4310-55-M